

**The Correspondence between an Evolving Mental Space
and Text Production**

Inger Bierschenk

Copenhagen Competence Research Center and
Department of Psychology, University of Copenhagen, Denmark

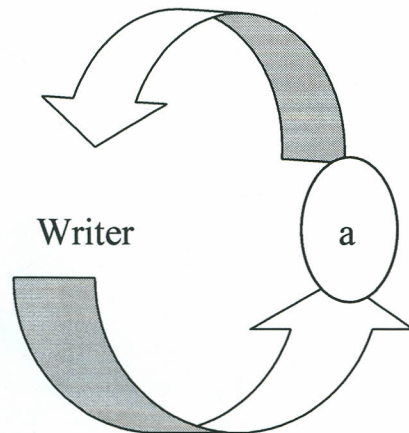
Poster session presented at 9th *Herbstakademie on Self-Organization of Cognition and Applications to Psychology, Conference on Dynamical Systems in Cognitive Science*, October 25-28, 2000, Ascona, Monte Verità, Switzerland.

Self-reference in Writing

This paper deals with the intricate question of defining a writing style. Since the start of the literary epoch of modernism by the beginning of the last century, artistic writing has been influenced by the progress of natural science and technology as well as by new findings about human mind and behaviour.

Figure 1.

Self-reference in Writing



Style of writing \equiv Style of thinking

20th Century thinking:

Structuralism – Europe
Functionalism – USA

Two lines of scientific thinking (paradigms) can be discerned from the 1920's onwards: the *structuralism* in Europe and the *functionalism* in the USA. Structuralism as scientific principle found its area of application in Gestalt psychology, which was oriented towards the organisation of part-wholes of human mind. But since it could not provide psychologists with mental tests, it was soon replaced by the functionalism in the USA. Functionalism was modelled in the form of behaviourism and the behaviour model has been the dominating one ever since. However, and this is part of the actual experimental question, the functionalism and the behaviourism are difficult to discern from one another in scientific practice.

The starting-point of the present study is the assumption that scientific ideas will influence writing and other cultural utterances in various fields. Thus writers of pure literature would try to transform scientific ideas and concepts in their telling a story, even though they will not necessarily be aware of which concepts in fact are present in their texts and in what way.

The *hypothesis* put forward in this poster presentation is that Ernest Hemingway in being an American writer and productive in the 1920's, would be categorised as a functionalist in mind and, consequently, a behaviourist in practice. Therefore, the principle behind this hypothesis would be outlined as in Figure 2.

Figure 2.

The Experimenter's Mind-Hypothesis

Functionalism

Behaviourism
(experiential)

A \longrightarrow (AaO)

Experimenter's
Mind

(Child moves on cliff)

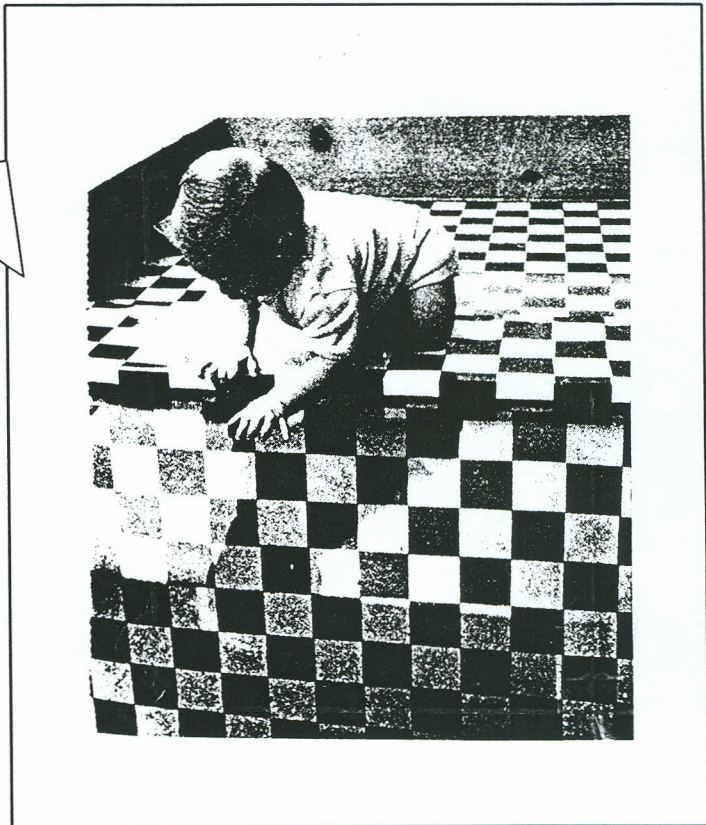
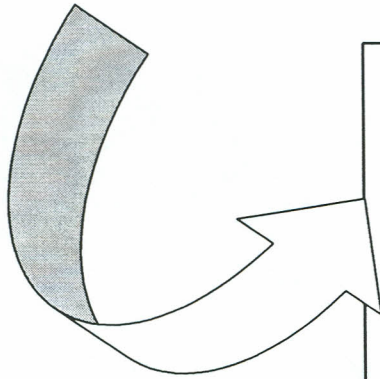
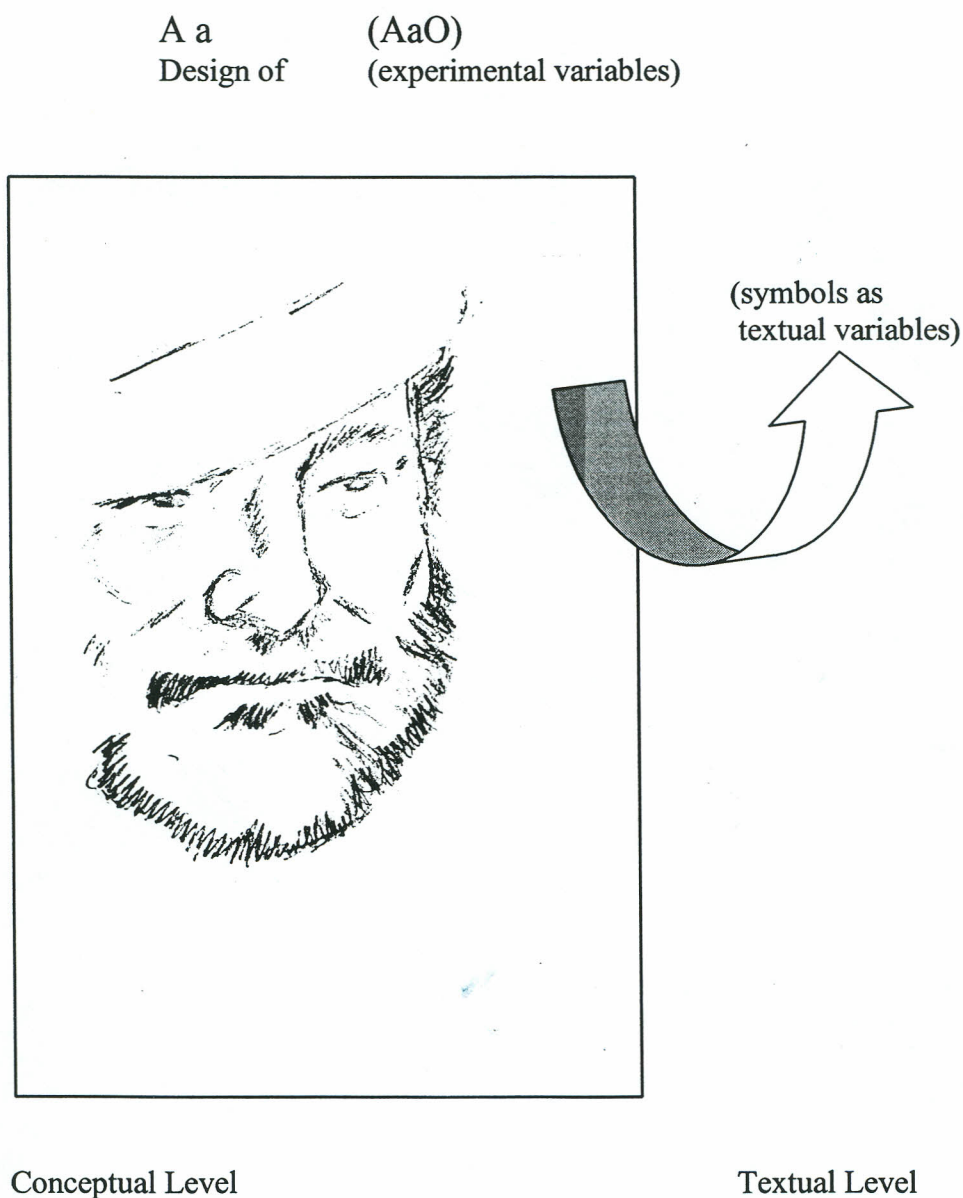


Figure 2 should be read as follows: The functionalism is governing the behaviourism. In a scientific setting, the behaviour model is realised as an inner parenthesis, expressing a level of processing on which the components *Agent*, *action*, and *Objective* are acting in an affinity relation. As an example of a true experiential (ecological) background to this relationship the functionalistic – behaviouristic “Visual Cliff”-experiment is given (Gibson & Walk, 1960). In this setting the governing functionalistic component of the paradigm is realised as the experimenters' mind and the behavioural component is realised as the child (A) moving (a) on the cliff (O).

Figure 3.

Transformation of the Ecological Level into Text



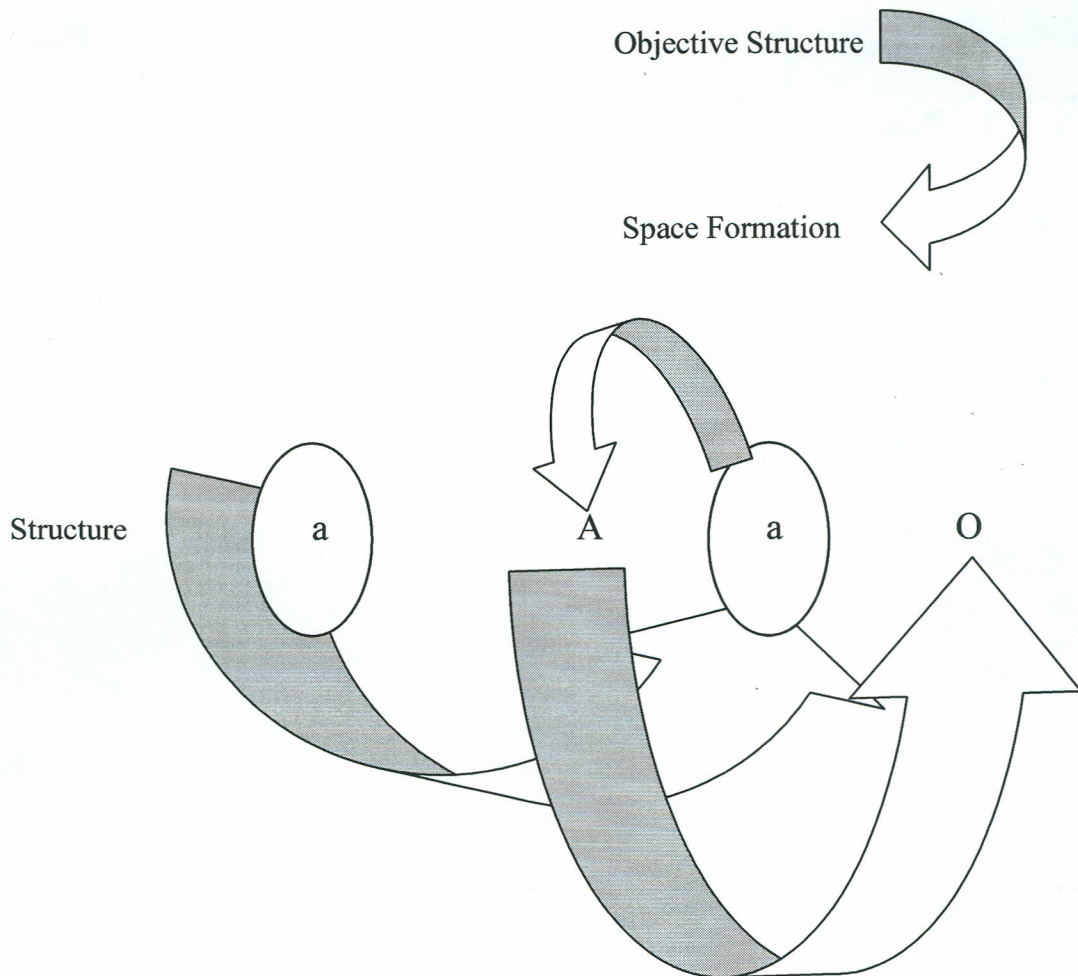
By transforming the ecological level of Figure 2 to a level at which the behavioural component is the written action means that the experimental variables (child and cliff) will be replaced with symbols (Figure 3). This measure introduces an involvement of the designer with the designed, which is different in type compared to the former level, although not different in kind. Letting the writer Hemingway take the functional position of experimental designer means that he will be a representative of the way a story writer writes himself into the textual level by means of the style with which he mediates the textual variables.

Figure 4.

Prerequisites for Evolving Space

Writer's
Perspective → Texture
(worked-out surface)

Perspective Structure → (AaO)



The writer's perspective should be discovered by means of the texture he has produced. A method for the analysis and measurement of structure will be used. By this method the A and the O components of the texture will be analysed as to the degree to which a structure can be discovered, which reflects properties of the transformed behavioural component. The design of Figure 4 moreover visualises the idea that involved in the objective structure is the writer's intention (perspective), which imposes spatial co-ordinates on the extension of his text production.

Experimental Design

The experimental design for the study of Hemingway's writing style is presented in Table 1.

Table 1.

Design for the Study of Hemingway's Writing Style

		O	
-+ a		-	+
A	-	Symbol (Verbal Expressions)	Variation of Type (Roles)
	+	Variation of Function (Placing)	Understanding (Effect of Reading)

A fixation of both A (Perspective) and O (Viewpoints) means Symbol, which is stationary and functions as the zero-hypothesis for the reading process. To develop understanding requires syntactic movement. Thus (-+) means that the objects vary while the perspective stays the same (persons as types, i. e. roles). The (+-) case means that the perspective, i.e. the function, varies (persons move in the room and talk from different angles). A refinement of this technique is to let someone look into a mirror to reach perspective change without functional movement.

In this way Hemingway manipulates the perspective for the reader to obtain understanding (++). The diagonal (-+, +-) represents events at the textual level whereas the opposite diagonal represents the writer's intention. The diagonals have a complementary function.

Method and Experimental Text

The method used is Perspective Text Analysis, which has been developed by Bernhard and Inger Bierschenk. In this connection it is sufficient to refer to B. Bierschenk's (2000) poster presentation at this conference.

The experimental text is a portion from a short story, "The killers", first published in 1927 (Hemingway, 1977). It is worded:

Sam, the nigger, standing in his apron, looked at the two men sitting at the counter. 'Yes, sir,' he said. Al got down from his stool.

'I'm going back to the kitchen with the nigger and bright boy,' he said. 'Go back to the kitchen, nigger. You go with him, bright boy.' The little man walked after Nick and Sam, the cook back into the kitchen. The door shut after them. The man called Max sat at the counter opposite George. He didn't look at George but looked in the mirror that ran along back of the counter. Henry's had been made over from a saloon into a lunch-counter.

'Well, bright boy,' Max said, looking into the mirror, 'why don't you say something?'

'What's it all about?'

'Hey, Al,' Max called, 'bright boy wants to know what it's all about.'

'Why don't you tell him?' Al's voice came from the kitchen.

'What do you think it's all about?'

'I don't know.'

'What do you think?'

Max looked into the mirror all the time he was talking.

'I wouldn't say.'

Articulation of a Space and its Folded Information

The following analyses will show the space of the sample text. It is a typical text in being accurate, unemotional and told in the form of a dialogue. Following the paradigmatic presentations so far, Figures 5 and 6 show the space of the objective structure, that is the O- and A-spaces of the inner parenthesis.

The figures represent the variability at textual level. As can be seen, both spaces extend very close to the 0-line, which means that no depth has been projected from the surface layout. Moreover, the formation in the A-space shows great similarity with the O-space. The result implies that the assumed involvement of the outer A in the objective structure can be confirmed: The formation of the spaces is produced complementary to each other.

With respect to the hypothesis it can be stated that the response surfaces give the impression that the text is very compressed and intensively worked out. A rigid action radius and a purified environment can be read out from these formations. Whether this is reflecting a behaviouristic way of writing, as stated in the hypothesis, will be an open question until the information structure of the spaces has been analysed.

Does the narrow surface layout reflect an information structure corresponding to the functionalistic – behaviouristic experimental design, which has been expected? The answer is given in the folded spaces of Figures 7 and 8, which represent in the form of holophors the information embedded in the structure.

The graph of Figure 7 forms three evident mountain chains, one low marked by *Caution* and *Estrangement*, one with the higher peaks *Hostility* and *Pain*, and between these formations a single top expressing *Risk*. This is a depiction of an environment, which contextualises the risky visual cliff, the conspicuousness and strange feelings in the exploring child, and the aggressive, dangerous cliff which may cause pain for the child, if it picks up its meaning. This is exactly what the Visual Cliff-experiment aimed at simulating with the aid of the behavioural component.

Figure 5.

The Unfolded Space of the Objective-Component

Unfolded O-Space

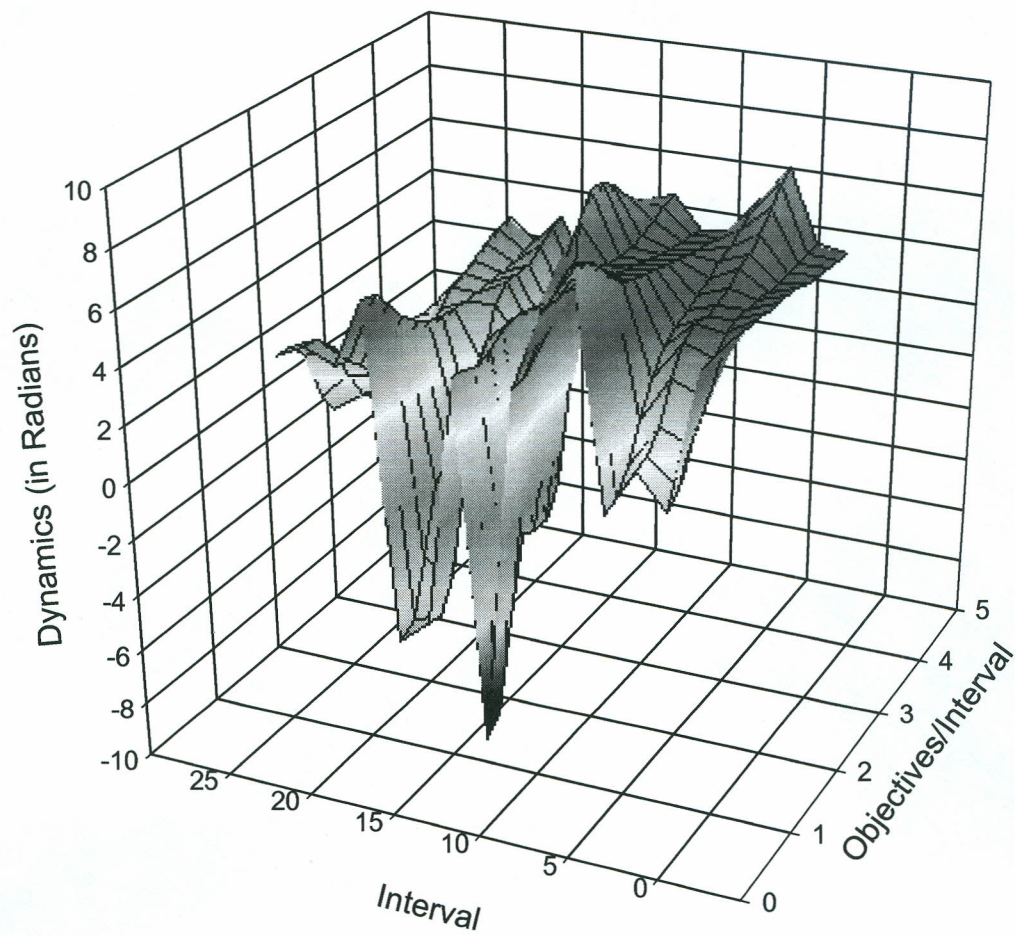


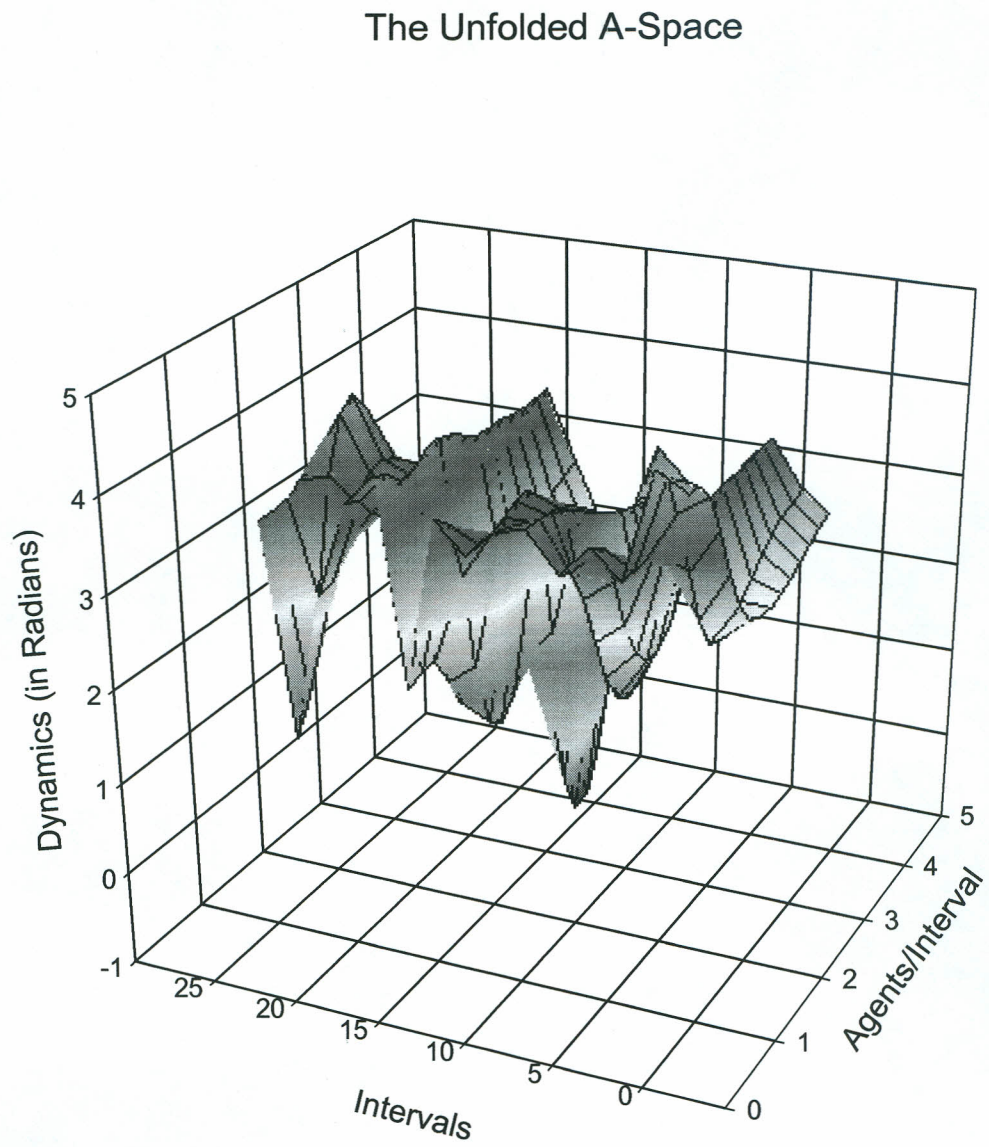
Figure 6.*The Unfolded Space of the Agent-Component*

Figure 7.*The Folded Space of the Objective Component*

The Folded O-Space

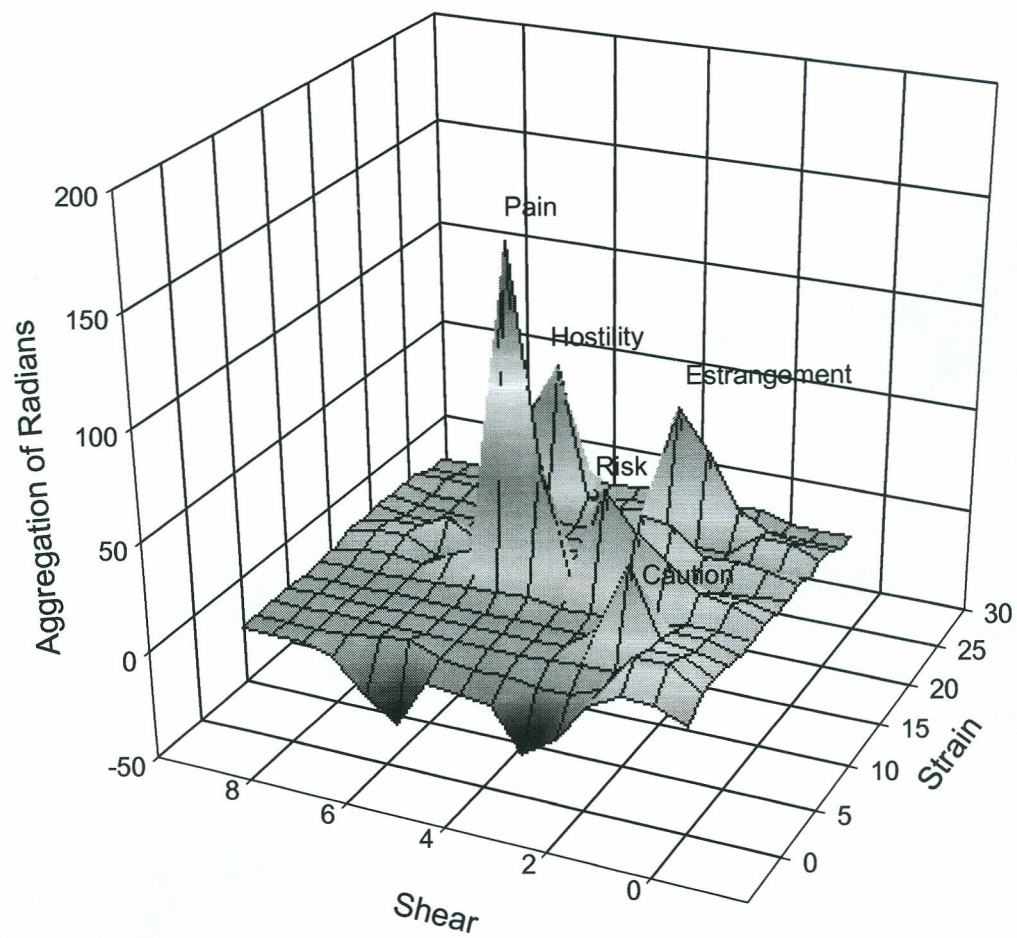
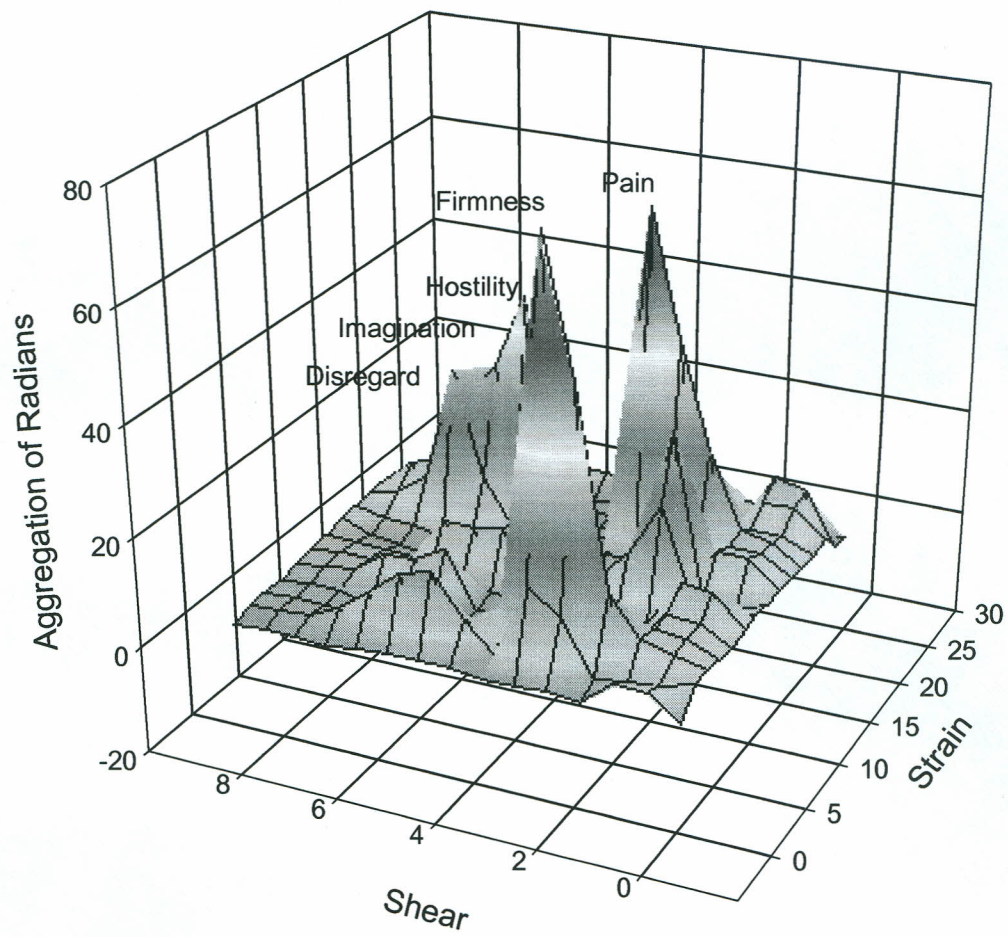


Figure 8.*The Folded Space of the Agent-Component*

The Folded A-Space



Hemingway has simulated the pain, which is the expression of the understanding that may be the outcome of the reading.

The Agent's perspective is represented in Figure 8. *Hostility* and *Firmness* indicate the writer's intention to build up a threat with functionalistic accuracy. The highest peak is *Pain*, which is formed by *Disregard* and *Imaginary*. Both represent the intention to design an environment, which is dangerous, however virtual.

In conclusion, these formations are complementary too. The main structure at the textual level is bound to the writing event, both the fiction produced and the intentionality that is inevitably built into it. *Hostility* and *Pain* both imply an objective and a subjective side and thus emerge as a unity in this analysis.

And how about the answer to the research question? Is Hemingway a functionalist in mind and a behaviourist in practice? Well, the results of Figures 5-8 tell us that he is a functionalist throughout, since functionalist ideas necessarily govern behaviourist concepts when it comes to practice. However, it should be pointed out that without the method of analysis used the functionalist structure of the designer would not have been distinguished from the object of his design.

References

- Bierschenk, B. (2000). *Nature's string stitching device for the production of a language space*. Poster session presented at 9th Herbstakademie on Self-Organization of Cognition and Applications to Psychology, Conference on Dynamical Systems in Cognitive Science, October 25-28, Ascona, Monte Verità, Switzerland.
- Gibson, E. J., & Walk, R. D. (1960). The "visual cliff". *Scientific American*, 202(4), 64-71.
- Hemingway, E. (1977). The Killers. In E. Hemingway, *Men Without Women*. (pp. 49-58). London: Granada Publishing. (First published 1927)
- SigmaPlot 5.0 (1988). *User's Guide*. Chicago: SPSS Inc.

Illustration

The illustration in Figure 3, page 5, is copied from a drawing by Erik Palmquist to the cover of the Swedish translation of Hemingway's "Islands in the stream" published by Aldus/Bonniers, Stockholm, 1972.

Author's Note

This article has been produced with financial support from the Danish Research Councils. Correspondence should be sent to Inger Bierschenk, Copenhagen Competence Research Centre, Copenhagen University, Njalsgade 88, DK-2300 Copenhagen S, Denmark or via E-mail to INGER@axp.psl.ku.dk